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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,362	04/14/2005	Antonio Giangrasso	6031/85268	6969

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EXAMINER	
DESAI, ANISH P	

ART UNIT	PAPER NUMBER
1771	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,362	GIANGRASSO, ANTONIO	
	Examiner	Art Unit	
	Anish Desai	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,8 and 11-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,8 and 11-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments in response to the Office action dated 01/19/07 have been fully considered.

2. Claims 1-4, 8, and 12-18 are pending. Claims 17 and 18 are newly added claims.

3. All of the previously made claim objections are withdrawn in view of the present amendment and response (see page 3 of 06/19/07 amendment).

4. The 35 USC Section 112-second paragraph rejections are withdrawn in view of the present amendment and response (see page 2 of 06/19/07 amendment).

5. All of the previously made art rejections are maintained.

6. A new ground of rejection is made to claims 17 and 18 over Giangrasso (EP 1101873) in view of Anderson et al. (US 5,548,960), Sternberg (US 4,184,963), and Derwent Abstract of DD137026A.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-4, 8, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over David (US 3,048,537) in view of Anderson et al. (US 5,548,960) and Sternberg (US 4,184,963), substantially as set forth in the previous Office Action.

Regarding claim 1, David teaches a process for preparing porous articles of manufacture of polyethylene (column 1, lines 10-14). The porous articles of David can be prepared from sintering low-density polyethylene particles (column 1, lines 57-60). Additionally David discloses porous articles such as a filter (Figure 4). The sintered plastic article of David reads on the plastic body as claimed. Moreover, the density of low-density polyethylene of David's invention is 0.91 to 0.93 g/cm^3 (column 3 lines 30-31), which reads on sintered plastic, granulate particles having a density of 0.6 to 1.2 g/cm^3. As to the limitation of "granulate particles having a size in the range of from 2 mm to 10 mm", David discloses that porous articles can be formed from resins of any particle size. According to David, the particle size is not critical, but the larger the particle size the greater the pore size of the article obtained, and correspondingly, the greater the permeability (column 3, lines 64-67). Although David does not explicitly teach the particle size of 2 mm to 10 mm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the particle size of 2 mm to 10 mm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and determining the workable range of the generally disclosed variable is likewise involves only a routine skill *In re Aller*, 105 USPQ 233.

With respect to claim 1, David is silent as to teaching particles prior to sintering were irregularly distributed relative to each other and in contacting relation and a bulk density of the plastic molded body of 150 to 250 g/l (0.15 to 0.25 g/cm^3). It is the Examiner's understanding that the irregular distribution of particles relative to each other

in contacting relation creates turning points (tortuous path) in the passing through of liquid and the more turning points exits, the greater the filtering effects (see 0011 of US Patent Application 2006/0141233A1 of presently claimed invention). This feature is taught by the prior art of Anderson. The prior art of Anderson teaches an extruder and methods for converting pressurized liquid CO_2 feed into dry ice pellets of predetermined shape and size. The extruder of Anderson achieves increased in production rate of dry ice pellets utilizing sintered plastic filter media which provides enhanced removal of CO_2 gas from the CO_2 snow (dry ice) (abstract). The sintered plastic filter media of Anderson reads on the plastic body of claim 1. Further, Anderson teaches that the porous plastic filter media comprises an irregular and nonuniform distribution of plastic particles. According to Anderson, this filter media provides a plurality of tortuous and irregularly shaped air passages running there through for purposes of venting CO_2 gas from CO_2 snow. As a result, the production capacity is significantly increased (column 8, lines 16-25). Additionally, Anderson teaches that a single polymeric constituent of varying particle size and shape may be used as well as multiple polymer beds which incorporate two or more distinct polymeric constituents capable of providing a tortuous and irregularly shaped path through the resulting structure (i.e. filter) (column 8, lines 26-35). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to irregularly distribute plastic particles relative to each other in contacting relation, motivated by the desire to create tortuous and irregularly shaped path through the filter such that the filtration capability of the filter can be enhanced.

With respect to claims 1 and 2, David as modified by Anderson is silent as to teaching a bulk density of the plastic molded body of 150 to 250 g/l (0.15 to 0.25 g/cm^3) and 150 to 200 g/l (0.15 to 0.20 g/cm^3). However, Sternberg discloses an immersible molecular filter that is formed from a porous polymeric body (abstract and column 1 lines 60-68). The porous body of Sternberg is formed of sintered polymer such as polyethylene and has a bulk density of less than 0.5 g/cm^3 such as from about 0.25 to about 0.35 g/cm^3 (column 5, lines 42-43), such that it is very light in weight (column 1, lines 65-67). The bulk density of less than 0.5 g/cm^3 incorporates the bulk density of 150 to 200 g/l (0.15 to 0.20 g/cm^3) as required by the claims. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the bulk density of the porous filter of David in the range as taught by Sternberg, motivated by the desire to obtain a light weight but effective filter.

Regarding claim 3, as previously noted David teaches polyethylene particles. With respect to claims 4 and 13, although David as modified by Anderson and Sternberg does not teach plastic granulate particles are lenticular, since David as modified by Anderson and Sternberg teaches the same subject matter as claimed by the applicant (filter), in absence of unexpected results, choosing a particular shape for particles such that it can be used as a filter involves only a routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the lenticular plastic granulate particles of low-density polyethylene in the porous filter of David, motivated by the desire to create a porous sintered filter. With respect to claims 8 and 14-16, David teaches that a layer of polyethylene particles

is spread upon one of the confining surface in the desired height per unit area of surface and sintered (column 2 lines 71-72 and column 3 lines 20). With respect to claims 11 and 12, as previously noted David teaches porous sintered filter formed of sintering low-density polyethylene particles.

8. Claims 4, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over David (US 3,048,537) in view of Anderson et al. (US 5,548,960) and Sternberg (US 4,184,963) as applied to claims 1 and 11 above, and further in view of Derwent Abstract of DD137026A.

The invention of David is previously disclosed and is applicable to claim 16 as previously noted. David is silent as to teaching plastic granulate particles are lenticular. However, DD137026A teaches box or bottle shaped cartridge for desilverizing of photographic baths is filled with open pore high active partially sintered particles. The particles are spherical, lenticular, and cylindrical, in form of platelets and/or discs. These particles are packaged inside the cartridge in such as way that their spacing from one another regulates the rate of flow of the bath liquor through the cartridge, same effect as the sintered body claimed instantly. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose lenticular low-density polyethylene particles in the invention of David, motivated by the desire to regulate the rate of flow of material to be filtered.

9. Claim 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giangrasso (EP 1101873) (English translation provided by the Examiner) in view of

Anderson et al. (US 5,548,960), Sternberg (US 4,184,963), and Derwent Abstract of DD137026A.

Giangrasso discloses a filter tube for introduction into a ground borehole for filtering a liquid stored in the ground. The filter tube of Giangrasso comprises a porous filter layer made of sintered plastic material arranged on the outside (page 2 of the English translation). The plastic material of Giangrasso is preferably used in granular or powder form wherein the particles are of high or ultrahigh molecular weight polyethylene particles defined as HD-HMW-PE and UHMW-HD-PE respectively (see page 3-4 of English translation). Although, Giangrasso does not disclose the density of HD PE of his invention, it is the Examiner's position that it is known in the art that HD PE generally has density in excess of 0.93 as evidenced by US 3,048,537 to David (see column 3 lines 34-34). Additionally, Giangrasso discloses that the particle size of polyethylene or polypropylene is from 1 μm to 5 mm (page 7 of English translation), which meets the claim requirement of the granulate particles having a size in the range of from 3 mm to 10 mm.

The difference between the claimed invention and the prior art of Giangrasso is that Giangrasso is silent with respect to teaching irregular distribution of particles relative to each other prior to sintering of particles, a bulk density of 150 to 200 g/l (0.15 to 0.20 g/cm^3), and plastic particles are lenticular.

The invention of Anderson et al. (US 5,548,960) with respect to claim requirement of irregular distribution of particles relative to each other is previously disclosed. Thus, it would have been obvious to one having ordinary skill in the art at the

time the invention was made to irregularly distribute plastic particles in the filter of Giangrasso relative to each other as taught by Anderson, motivated by the desire to create tortuous and irregularly shaped path through the filter such that the filtration capability of the filter can be enhanced.

The invention of Giangrasso as modified by Anderson is silent with respect to teaching bulk density of particles and that particles are lenticular. However, the invention of Sternberg and DD137026A is previously disclosed. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the bulk density of the porous filter of Giangrasso in the range as taught by Sternberg, motivated by the desire to obtain a light weight but effective filter. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose lenticular shaped particles, motivated by the desire to regulate the rate of flow of material to be filtered.

Response to Arguments

10. Applicant's arguments filed on 06/19/07 have been fully considered but they are not persuasive.

Applicant argues that the primary reference of Pall (David) does not teach a pre-filter material or a plastic molded body comprising irregularly sintered plastic granulate particles as claimed. Additionally, Applicant argues that While Pall teaches that particle size is not critical; Pall also teaches that for optimum results particle should pass a 30 to 100 mesh screen, which is equivalent to about 149 to about 595 microns. The Example 8 of Paul discloses polyethylene particles passing through 100 mesh sieves, which is

equivalent to about 150 microns. The Examiner respectfully disagrees. As to the arguments regarding pre-filter and plastic molded body, the reference of Pall discloses sintering of polyethylene particles, which reads on the plastic molded body. Additionally, claims do not recite any characteristics that would clarify as to what is meant by "pre-filter". In absence such clarification, the recitation "pre-filter" is interpreted as any filter and the reference of Paul discloses that his invention can be used as a filter, which meets the limitation of "pre-filter". With respect to Applicant's argument regarding the particle size of Pall being outside the claimed range, while it is true that the particle size as exemplified by Pall is out side the claimed range, it is the Examiner's position that Applicant is ignoring the broader teaching of Pall which states that "The particle size is not critical, but larger then particle size the greater the pore size of the particle obtained, and correspondingly, the greater the permeability" (column 3 lines 65-66). Thus, in absence of demonstrating any criticality to the particle size, choosing a larger particle size, which would increase the permeability, would involve a routine skill in the art.

Applicant argues that Anderson does not cure the deficiencies in Pall reference and the particle size disclosed in Anderson reference is smaller than the particle size as claimed. The Examiner recognizes that the particle size of Anderson reference is smaller than the claimed particle size, however the Examiner is not relying on Anderson to teach the particle size. The reference of Anderson is relied upon to teach the feature of irregularly sintered particles.

Applicant argues that Sternberg is not directed to a pre-filter nor could the filter of Sternberg be used as a pre-filter. The Examiner respectfully disagrees. As to the argument regarding the pre-filter, as stated previously the claims do not recite any characteristics that would clarify as to what is meant by "pre-filter". In absence such clarification, the recitation "pre-filter" is interpreted as any filter and the reference of Sternberg discloses such a filter.

Applicant argues that the cited references do not solve the problem solved by Applicant. In response, please note that the use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." *In re Heck*, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (Quoting *In re Lemelson*, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

Applicant argues that DD137026A discloses of a cartridge for desilvering photographic baths. Since the cartridge is formed of sintered granular particles of iron, one would not seek the guidance from a reference directed to a metal cartridge for desilvering photographic baths when seeking to provide a pre-filter comprising irregularly sintered plastic granulate particles. The Examiner respectfully disagrees. The DD137026A is relied upon to disclose lenticular shaped particles that are being sintered. To the Examiner it is irrelevant whether the particles are of metal or plastic, it is the shape of the particle that is relied upon as the basis for the rejection. DD137026A reference discloses that the particles are packaged inside the cartridge in such a way that their spacing from one another regulates the rate of flow of the bath liquor through

the cartridge. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose lenticular low-density polyethylene particles in the invention of David, motivated by the desire to regulate the rate of flow of material to be filtered. Accordingly, art rejections are maintained.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth M. Cole/
Primary Examiner,
Art Unit 1771

/A. D./

APD